CHILD SURVIVAL ACTIVITIES IN AZUAY AND MANABI PROVINCES/ECUADOR: A REPLICATION AND EXPANSION OF A SUCCESSFUL COMMUNITY OUTREACH MODEL

cs-VIII
Grant # FAO-0500-A-00-2050-00

FINAL EVALUATION

Submitted to

Agency for International Development
BHR/PVC/CSH
Washington, DC 20523

Submitted by

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May 1995

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TABLE OF CONTENTS

APPENDICES

ACRONYMS

APROFE	Ecuadoran Family Planning Agency
ARI	Acute Respiratory Infection
CHV	Community Health Volunteer
c s	Child Survival
KAP	Knowledge, Attitude, and Practice
MOH	Ministry of Health
NGO	Non-Governmental Agency
ORS	Oral Rehydration Solution
PAHO	Pan American Health Organization
TBA	Traditional Birth Attendant
WHO	World Health Organization

I. ACCOMPLISHMENTS AND LESSONS LEARNED

A. PROJECT ACCOMPLISHMENTS

A.1 Objectives of the Project as Specified in the Detailed Implementation Plan (DIP)

1. **IMMUNIZATION:** At the end of the project:

1) 75% of children between 12 and 23 months will be completely immunized at the age of one year.
2) 30% of women of fertile age will be covered with TT2.
3) 80% of mothers who live in the target area will receive training about the importance of immunization.
4) Surveyed mothers will show an increase of at least 20% in their knowledge about immunization.

2. **DIARRHEA: At** the end **of** the project:

1) 55% of mothers in Azuay and 45 % in Manabi will give their children ORS and/or home-made rehydration salts.
BREAKDOWN FOR MONITORING:
   la) Children getting liquids: 55% and 45% in Azuay and Manabi, respectively.
   lb) Children getting ORS (from packets or home-made): 40% in Azuay and 45% in Manabi.
2) At least 20% of mothers with children under two years of age with diarrhea will adequately manage their children's nutritional needs during and after diarrhea episodes.

3. NUTRITION: At the end of the project:

1) 72% of mothers in Azuay and 42% in Manabi will exclusively breastfeed their children during the first four months.
CHANGED IN THE MID-TERM EVALUATION TO:
43 % of mothers in Azuay and 21% in Manabi will exclusively breastfeed their children during the first six months.
2) 30% of pregnant women in Azuay and 45 % in Manabi will have the knowledge about nutritional practices for children under 2 years of age, during and after illness.

4. **VITAMIN A: At** the end **of** the project:

1) 454 families in Azuay and 900 in Manabi will have family gardens and model gardens in the high-risk priority zones (14 communities in Azuay and 18 in Manabi).
2) 650 mothers in Azuay and 1,100 in Manabi will participate in educational events.

5. **GROWTH SURVEILLANCE:** At the end of the project:

31% of children under two years of age in Azuay and 38% in Manabi will participate in quarterly growth monitoring sessions, representing 45 % of children in Azuay and 40 % of children in Manabi covered by the project.

6. MATERNAL CARE: At the end of the project:

1) 18% of pregnant women in Azuay and 30% in Manabi will be covered with TT2 by the time of their delivery.
2) 74% and 82% of pregnant women will receive some prenatal care in Azuay and Manabi, respectively.
3) 35% and 48% of pregnant women will receive some postnatal care from health officials in Azuay and Manabi, respectively.
4) At least 20% of pregnant women in Azuay and Manabi will recognize risk signs during their pregnancy.
5) 101 new traditional midwives and 168 previously trained ones will be trained and supervised by project and MOH staff.
6) At least 20% of mothers with children under two years of age in Azuay and 44% in Manabi will use modern methods of family planning.

7) **ARI:** At the end of the project:

1) 55% and 60% of mothers of children with ARI and respiratory problems will look for professional help in Azuay and Manabi, respectively.
2) 30% of mothers in Azuay and 45% in Manabi will identify high risk signs of ARI.

A.2 Accomplishments Related to Objectives

Overall, accomplishments for each objective are very positive and reflect the results of HOPE's empowering and catalytic performance and motivation provided to the Ministry of Health (MOH).

This section provides a general description of each of the project objectives. (See Appendix 1 for detailed information about baseline survey results, benchmarks set in the DIP, final survey results, percentages achieved, and finally percentages of change, which is the relationship between the baseline and the final survey results for each of the two provinces.) It should he noted that for some objectives, overly ambitious benchmarks were set, which can be seen in the percentages of accomplishments in the final survey. However, considerable improvements can he observed for each intervention.

When examining project accomplishments, it is important to note the survey methodology which uses a cross-sectional sample, so people interviewed in the final survey were not the same as those in the baseline. Also, the individuals interviewed may not have participated in project activities.

It can be seen that Project HOPE has achieved a positive increase from baseline levels in the two provincea. This result cannot be attributed entirely to Project HOPE, but to the team work with the MOH, health volunteers, midwives, various community members, Peace Corps and other NGOs.

SUMMARY OF SIGNIFICANT ACCOMPLISHMENT'S

To relate objectives and outputs, activities for each intervention are reviewed.

1. IMMUNIZATIONS

The benchmark for the number of children with complete immunization coverage was achieved in Azuay and reached 88% in Manabi.

With regard to the percentage of women of fertile age with two tetanus toxoid doses, the project started with low coverage levels and benchmarks were set relatively high. Results exceeded the benchmarks set for Manabi; Azuay did not reach its benchmark but registered a significant increase.

The percentage of women trained about the importance of immunization exceeded benchmarks in both provinces; similar accomplishments were made in increasing knowledge of the child immunization schedule.

2. DIARRHEA

The benchmark for giving rehydration liquids to children with diarrhea at home was reached. With regard to the use of oral rehydration salts and home solutions, benchmarks were achieved in Manabi, and Azuay registered a great increase.

Low levels of knowledge about the nutritional management of children with diarrhea were found in the baseline and final benchmarks were not reached. However, it is important to mention the considerable improvement made in Azuay (610%).

3. NUTRITION

Manabi registered a significant increase in the percentage of children under six months that were breastfed exclusively. Midterm indicators were adjusted in both provinces because of changes in exclusive breastfeeding norms to O-6 months, allowing for adequate achievements in both provinces and significant accomplishments in Manabi.

The project gave special attention to increasing the knowledge of women about nutritional needs during pregnancy and lactation. Benchmarks in this area were met satisfactorily.

The percentage of mothers who knew about appropriate nutritional practices for children of less than two years of age was quite low at baseline and final benchmarks were not met,

although improvements were noted in Azuay.

4. VITAMIN A

With regard to the establishment of family gardens, the project exceeded its projected outputs. These gardens resulted in an increase in the consumption of food rich in Vitamin A at home, thus improving family nutrition.

Regarding mothers' participation in educational events on Vitamin A, Azuay surpassed established outputs while Manabi almost reached them.

5. GROWTH MONITORING

This intervention, which was the most popular with mothers, was a success. Benchmarks were almost reached in Azuay and surpassed in Manabi.

6. MATERNAL CARE

Coverage of pregnant women with TT2 increased significantly in both provinces, but especially in Manabi. This is one of the project interventions which the MOH recognizes as a great help for the community.

The percentage of mothers with prenatal check-ups increased and even exceeded the benchmarks set in both provinces.

Coverage of mothers with postnatal check-ups reached 90% of the benchmark for this objective.

The baseline reflected a low percentage of knowledge of high-risk pregnancy signs by pregnant women. Benchmarks were exceeded in Manabi; Azuay didn't reach its benchmark but registered a considerable increase in knowledge.

With regard to the training of TBAs, the project followed the recommendation by the MOH of not training an excessive number of TBAs, therefore the output listed in the DIP was not reached.

In both provinces the project completely reached its objective to provide appropriate follow-up to existing TBAs in the target areas.

The benchmark for prevalence of modem contraceptive use was not reached, even with the support provided by APROFE. However, Azuay registered an important increase. It appears that this may be due to the fact that only women and not couples received information on this issue. In Azuay, males typically emigrate from the communities in search of work elsewhere.

7. ACUTE RESPIRATORY INFECTIONS (ARI)

The percentage of mothers who look for professional advice for their children who suffer from AIU registered an increase but did not reach the established benchmarks in the DIP for both provinces, This was the new component for the CS-VIII project. HOPE staff did not have experience with this intervention, and this might be one of the reasons for not reaching the benchmarks as planned.

The percentage of women who can identify high risk signs of pneumonia increased, greatly surpassing benchmarks for Azuay, and almost reaching them in Manabi.

8. VITAL STATISTICS

An Inter-Institutional Committee for Vital Statistics was created in Manabi. This committee, composed of Project HOPE, the MOH, the Ecuadorean Institute of the Census and Statistics, and the Civil Registrar's Office, operates permanently to improve and supervise the statistical system for births and deaths. With the improvement of this system, in which Project HOPE took a leadership role, timely and reliable vital data were gathered in the province.

A.3 Comparison of Accomplishments with Objectives - Limitating Factors

Among the most important ones are:

1. National strikes of health workers, especially during the last two quarters of 1994, obviously affected the project. The MOH units remained closed for several months, making the work of volunteers and the accomplishment of the immunization objective particularly difficult.

2. The process of decentralization carried out in both provinces by the MOH started with some problems which generated confusion among MOH personnel and produced changes in the Health Region offices. Even though the administrative and financial decentralization process makes it possible to coordinate better at the local level, the process of decentralization is in a transition phase and lacks clarity in its procedures, impeding the coordination of efforts with the MOH. In addition, this decentralization process has taken some health workers' time from their work at the operational level. Due to the lack of health personnel for the new administrative structure, several rural doctors (without the required expertise) are in charge of the health areas. This certainly does not facilitate the decentralization process which is so important for the MOH.

3. Because there are fewer health professionals graduating, many health centers located in rural areas of the country, especially within the project target area, remainunstaffed with physicians and nurses completing their rural service. The MOH does not yet have the appropriate mechanisms to cover those health units that are left without health personnel. This has directly affected the project, because when health personnel are present in the rural health units, coverage rates and impact of other interventions increase considerably.

4. Lack of supplies, especially vaccines to be provided by the MOH for immunization, has directly affected the accomplishment of project objectives.

5. Other health interventions requested by the community, such as environmental sanitation (safe water, latrines, garbage removal) and a broader training of health volunteers beyond the CS intervention were not planned and implemented to the detriment of the communities.

6. Country idiosyncracies and cultural factors were barriers for increasing participation in family planning and use of modem contraceptives, particularly in Azuay.

7. The Manabi Provincial MOH Office stated that one of the reasons for their delay to fully understand HOPE objectives was the impression that this project was imposed on them by the central office of the MOH. Once this misunderstanding was clarified, the relationship with the provincial office improved dramatically. It is expected that, in the future, provinces will participate more fully in all aspects of project planning.

A.4 Unintended Benefits of Project Activities

With regard to unintended benefits of the project activities, it is important to point out the following:

1. Some populations received services by the project even though they were located outside the target area. This happened in Azuay as a result of a natural disaster, "Josefma," during which HOPE staff provided primary health care services outside its target area to these surrounding communities at the special request of the MOH. The USAID project officer and the USAID mission were informed of this temporary situation.

2. Some health volunteers trained by HOPE became trainers and supervisors in the health programs of other agencies. This can be taken as a recognition of the quality of HOPE's CHVs.

3. The development of joint activities (i.e., training of volunteers and TBAs) with other NGOs made good use of community resources and established a solid basis for coordination of community based efforts.

4. Although it is a given that there should be a good working relationship among HOPE staff, it is important to note the outstanding team work and commitment from each and every one of the staff members to work with and help the communities. This special motivation has opened job opportunities for HOPE staff with other NGOs and recognizes these hard-working HOPE staff.

5. Many health CHVs and TBAs have broadened their activities and forged linkages with other NGOs and the public sector for the benefit of their communities. They have managed to solicit support for latrine building, school meeting rooms, water, and training in other

areas related to community development that affect health status (e.g., agriculture).

6. Six health volunteers trained by HOPE have been selected for additional training by the Provincial MOH Office in Azuay. This additional training will help these volunteers to become auxiliary nurses, enabling them to return to their communities with the knowledge and skills that can provide them with a steady income. It will also make it possible for the MOH to have members of these communities on its staff. Four other CHVs have been selected for similar positions in the "Enhancement of Basic Health Services Project," which is being financed by the World Bank.

7. With the MOH and other public agencies, HOPE set up a permanent working committee to improve vital statistics in Manabi.

8. Project HOPE has participated in the Manabi Technical Health Committee -- the highest committee in the Provincial MOH Office -- as a special member. This made it possible to include project activities as part of the programming of the Manabi MOH Office.

A.5 Final KPC Survey

See Appendix 2 for the final KPC survey results for both provinces. Appendix 3 lists key CS indicators.

B. PROJECT EXPENDITURES

8.1 Pipeline Analysis

The pipeline analysis is attached in Appendix 4.

B.2 Budget Compared to Expenditures

The total expenditure for the project was $1,127,489, $780,000 (69.2%) for USAID and $347,489 (30.8 %) for Project HOPE. Headquarters expenditures amounted to 9.3 % of the total budget.

Procurement costs were slightly lower than anticipated. The project spent about $4,000 more on evaluation by using an expatriate midterm evaluator. Because the midterm evaluation results provided good direction for the remainder of the project, this was considered an excellent investment. There was only a minor variance between planned and actual expenditures for staff (1.6%). Expenditures could have been much higher due to several government mandated salary increases, but a number of staff were laid off in the last months of the project to control grant expenditures. This of course had some impact on the ability of the project to achieve its objectives. Travel costs and other direct costs were significantly higher than expected, due to rapid increases in gasoline prices and communications costs. Project HOPE received a new approved indirect cost rate to replace the lower provisional cost rate. Additional Project HOPE contributions more than off-set the increased indirect costs.

B.3 Financial Management

Project HOPE has an established financial system that sets an imprest level for each project site and replenishes resources monthly based on project expenditures. This assures that project do not experience money shortages. The field office submits detailed monthly financial reports with expenses coded by cost center. These reports are reviewed by the Assistant Regional Director and the Finance Division at Headquarters. This project stayed relatively close to the DIP budget, and all expenditures were handled responsibly, in line with grant guideline.

B.4 Lessons-Learned Regarding Expenditures

- **Ecuador,** like many developing countries, is going through many economic changes. This can affect budgeted line items. In this particular case, transportation costs increased by 56%. Tight project budgets don't allow for any unforeseen expenditures. If they occur, program content is affected.

- Due to substantial budget cuts in the proposed project budget, project duration had to be cut to only 28 months. This short time frame made it difficult to make up for unforeseen constraints (e.g., multiple strikes of the MOH; process of decentralization, etc.).

LESSONS LEARNED

1. Having the MOH as **a partner** in this project, made it possible for Project HOPE to set up its offices in MOH facilities, which improved opportunities for joint programming. It facilitated horizontal integration of project activities and enhanced their sustainability. Working in close quarters allowed both institutions to visualize strengths and weaknesses, and planning of activities was accomplished taking into account the resources of the MOH. This aspect was considered very valuable by MOH officials who became very involved with the project. It is recommended that similar projects try this approach, which benefited all parties involved.

2. In order to meet a reasonable cost/beneficiary ratio, the project included many communities from different ecological areas. Some of these communities were hard to reach, making close supervision of volunteers and TBAs difficult. Perhaps, with less communities it would have been possible to promote the development of more health committees at the community level.

3. The training provided sufficient motivation to the CHVs to ensure their ongoing participation in the project activities.

4. In some cases, by providing TBAs with supplies and training an impression was created that Project HOPE was paying salaries to TBAs. To avoid such wrong impressions, HOPE should have explained to the community the purpose of training and supply distribution

first.

5. The development of a good relationship with the Catholic Church -- the strongest and most permanent church in Ecuador -- resulted in a strong support of most project activities. The Catholic Church provided meeting rooms, supplies, and lodging for HOPE staff and will continue working with HOPE CHVs through its many social programs in different communities, providing them with training and supervision. This also constitutes a recognition of the excellent training provided by the project.

II. PROJECT SUSTAINABILITY

A. COMMUNITY PARTICIPATION

A.1 Community Leaders Interviewed

In the visits to the community, 11 leaders from different villages were interviewed. Appendix 5 contains the names and communities of these leaders.

A.2 IA.3 Effective CS Activities/PVO Support for Community Sustainability

The majority of these leaders participate in so called Community Development Committees, where in addition to health, other development aspects are addressed. These leaders consider the following activities important in addressing their needs:

(1) Several of the leaders interviewed expressed that they felt that the community education was important, particularly for mothers to improve their child health care practices. Especially effective was information about immunixation and about the care needed by children with diarrhea.

(2) They considered the fact that community members have been trained effective, because these individuals help the communities to prevent death and disease.

(3) The work that was done to strengthen the relationship between the community and the MOH health facility staff was also appreciated very much.

(4) One aspect viewed very favorably by the communities was HOPE's invitation to other NGOs to collaborate. In this way, communities received a variety of services that helped them resolve health needs at the community level.

Project HOPE implemented a health strategy called "micro-concentrations" in different communities in the target area with much success. Even though this activity focuses primarily on mothers with children under two (primary target group of the project) it allows for the participation of other community members (e.g., heads of households) and above all school children who are exposed to the health messages and have an opportunity to ask questions of CHVs, TBAs, MOH and project staff. These micro-concentrations are very

popular, and a representative number of the members of the community participate and are reached by the health messages. In these microconcentrations, practical demonstrations show how the health messages can be applied.

A.4 Community Participation in Project Planning

As was pointed out earlier, the present project is an extension and expansion of a CS-V project. This report focuses most on the communities in the cantons that were added in the CS-VIII project. A number of these communities had requested that Project HOPE provide services to their community prior to the CS-VIII project. According to the community leaders, when the communities found out that Project HOPE was going to work with them, the communities met, selected volunteers for training and identified the active TBAs in their area. The legitimate right of the community to select the persons to be trained as health volunteers is what communities consider their direct form of participating in the project. They make this selection process with the certainty that the selected persons will know how to represent their community adequately. In this scheme of community participation, the community provided all the necessary support to HOPE and MOH staff, and community health volunteers and TBAs without major difficulty. For example, for the micro-concentrations, community members provided space in their homes and prepared food for the visitors. In this final evaluation, the communities participated in their traditional manner. They did not select the communities that should be visited during the evaluation, nor the activities that were observed by the final evaluation team, but participated actively in all programmed activities.

A.5 Health Committees

With the support of Project HOPE, 40 health committees were formed in the two provinces. The committees generally consist of community leaders and are representative of their communities. In some cases, the members also participate in the community development committee. CHVs and TBAs frequently participate in the committees. Because there are 600 communities in the project target area, health committees could not be created in all. This was a disadvantage, because CS activities were easier to implement in the more organized communities.

A.6 Significant Health Issues

The committees created in the 40 communities are dealing with the issue of sustainability at this point, in particular what actions they will have to take to assure the continuity of the CS and maternal care activities when HOPE leaves. In three of these communities, one of the first actions was to implement activities to obtain funds for transport and food for the CHVs on the days when they visit the families that live at bit further away, i.e., the communities are trying to make up for the support provided by Project HOPE to these volunteers. These committees are also trying to generate funds through raffles and other activities, so that the CHVs can go to the health centers or posts for training courses, supervision, and coordination of activities. Finally, these funds are used to provide the CHVs with a small medical kit.

In other committees where the CHV is the secretary of health, the volunteer does not only cover health issues with the population, but takes care of other business to (e.g., trying to get a sewage system for the population). Another priority topic of the health committees is how to improve the relationship with the MOH health facility staff and the community at large.

One other recently formed committee meets in the health post with the support of the auxiliary nurses. It plans and coordinates activities with the health facility staff, e.g., when community outreach visits are best conducted to the more distant communities, so that these can benefit from the services.

A.7 Community Involvement

It was obvious to the project staff and the final evaluation committee, that in the communities with health committees project interventions could be implemented more effectively, and that the committees implemented complementary activities (e.g., improvements in the health infrastructure: opening of health facilities and broadening of health services), purchase of materials needed by the health centers or posts (gas for the refrigerator), or other materials. Some committees managed to increase the involvement of other agencies (church, military) which may make it possible to have ongoing supervision for CHVs and TBAs after Project HOPE leaves.

A.8/A.9 Community Resources

The primary contributions of the communities are no doubt their human resources. The CHVs are mainly young people of productive age that during the time they are in training and subsequently are implementing CS and maternal care activities give up time for income generating activities. This is a vital support to their communities, and is understood and accepted in this way by the volunteers. There is mutual recognition of this fact which is expressed in the active support of the communities to the CHVs when they need help or advice with respect to MOH health facility staff, the children, in terms of attending meetings they call, and support for specific activities. The CHVs are motivated by the support of their community and work with more dedication in the role assigned to them by their communities.

Through the health committees, community members assist with cash, with items to be raffled off, and food and drink for the participants of health activities. In two communities, health committees have provided land owned by the community for the implementation of HOPE activitiu. This land could be used for health posts or centers in the future.

B. COUNTERPART INSTITUTIONS

B . l Persons Interviewed

See Appendix 5 for counterpart staff interviewed. In addition, the evaluation team also interviewed Dr. Ken Yamashita, USAID/Ecuador, and Dr. Angel Racines, the head of Prevention and Promotion at the central level of the Ministry of Health, Quito.

B.2 Linkages with Health Development Organizations

The MOH is amsidered the key agency for health development in Ecuador, especially in the rural areas that are part of the target area of the project. The CS program carried out its activities in coordination with different levels of the MOH. These activities were developed as follows:

The project has complemented the activities of the MOH, with special emphasis on those of highest priority, such as, community organization and increasing the value of the communities placed on health. These complementary activities were implemented through health messages and health promotion activities.

Activities were also coordinated at the horizontal level, i.e., in the joint training, supervision, and monitoring of CHVs and TBAs.

A third type of relationship between the CS project and MOH activities has been both formal and informal. It has been formal at central level in the coordination of programming. At the health facility level, the relationship has been both formal and informal and has complemented and provided mutual support to strengthen the CS activities of both organizations.

In addition to the relationship with the MOH, Project HOPE has good relations with the following institutions which are important in the target area and at the national level:

1. With UNICEF, teaching materials have been exchanged, from which Project HOPE has accrued more benefit.

2. PAHO/WHO contributed technical materials for the different interventions. PAHO/WHO is funding Project HOPE and other NGOs to make the work with CHVs and health promoters in the province of Azuay more systematic.

3. Peace Corps has provided eight volunteers to participate in the field work of the project.

B.3 Key Local Institutions to Sustain CS

To achieve sustainability, three types of organizations have to be considered: the MOH; the Catholic Church and other NGOs; and the community.

1. The MOH is the local key health institution. The following activities related to sustainability are to be carried out by the MOH.

MOH staff from health facilities, especially auxiliary nurses who work at the community level are responsible for follow up and supervision of CHVs and TBAs.

MOH personnel agree that trained CHVs should not be wasted, and a strong commitment was made to continue working with these community members. This commitment is not equally strong in all health units, but is sufficient in most of them. However, all interviewed MOH staff declared that lack of funding will make it very difficult or even impossible to meet this commitment.

One of the concrete activities that the MOH will carry out, within its possibilities, is provision of supplies to CHVs and TBAs, especially ORS packets, and educational and promotional materials. It should be pointed out that those supplies are not always available at the health facilities.

In spite of the MOH's interest and recognition of the work carried out by Project HOPE, it is uncertain that the MOH will continue with those activities in the more distant communities because of lack of staff and funding.

2. Coordination with other NGOs has been very successful in the target area, especially in the province of Azuay. Some CHVs trained by Project HOPE have been recruited by other NGOs in order to continue with their activities, and some are becoming trainers of new promoters.

3. CHVs and TBAs confirmed their willingness to continue working for the health of their communities and are trying to maintain all activities carried out by Project HOPE. They have confirmed their commitment to coordinate with other NGOs and the Catholic Church. In communities with functioning health committees, the probability of sustainability is higher.

A close relationship with the Catholic Church was developed. The church is providing funding and supervision for an area of 16 communities to continue activities with CHVs and TBAs. These are communities that are not reached by MOH health services.

B.4 CS Activities Considered Effective by the MOH

In general, the MOH, at its different levels, considers the primary achievement of the CS project the development of a closer relationship between MOH health facilities and the communities. It provided moreinformation about MOH CS services to the communities and contributed to a more effective implementation of the following activities:

- Increase in the immunization coverage, especially TT vaccination of pregnant women and women of reproductive age.
- Increase in the knowledge level on maternal health topics by the communities.
- Improvement in the knowledge levels about diarrheal and respiratory diseases in the communities and promotion of the prevention of these diseases.
- Increase participation in prenatal care and identification of high risk pregnancy cases using TBAs.
- Improvement in the nutritional status of children using educational techniques developed by CHVs and TBAs.

Promotion and increase in the use of ORS packets or homemade ORS.
Maternal and child health are.

B.5 Skills Development

Project HOPE in Azuay and Manabi, jointly with the provincial office of the MOH, trained and updated the permanent auxiliary nurses in maternal and child health service norms at the health facility level. The updating of norms and their dissemination to other staff is a result of this CS project.

After their initial training, the MOH staff participated with Project HOPE's personnel in training CHVs and TBAs in CS norms and standards, emphasizing Project HOPE's interventions.

Additionally, MOH staff were trained by Project HOPE personnel in popular and adult education techniques, community outreach, and training-of-trainers, to enable them to re-train CHVs and TBAs; train new community volunteers as CHVs; and carry out supervision activities.

B.6 Abilities of the MOH and Other Counterparts for Sustainability

The present ability of the MOH and other local institutions to provide financial, human and ma&al resources to support activities after Project HOPE's program has ended can be described as follows:

1. In the short-run, the MOH does not have funds, human resources, and materials for various areas. When the decentralization process has been wmpleted, the health areas will be more able to integrate the costs and supplies to implement the community work.

2. In Azuay, Plan International and the Catholic Church have enough funds for some activities, such as ongoing supervision of CHVs and TBAs.

B.7 Effective Interventions

Effective interventions have been described in earlier sections.

B.8 Phasing Over of Project Responsibilities

During the last phase of the project, the following responsibilities were transferred to the MOH and the community by Project HOPE:

a Project HOPE decreased the number of its field visits, so that the CHVs, TBAs and MOH staff would begin to assume the jointly planned activities previously planned.

- staff knew about the duration of the project from its onset and prepared for it from the beginning . Because of that, they developed close ties with the CHVs and TBAs to be able to continue the activities in line with the available resources in the future.

- In the province of Azuay, the sustainability issues were discussed with MOH staff, other NGOs, and CHVs, and commitments were made to continue the CS activities.

- One recommendation of the evaluation team was to provide a list of trained volunteers to the Provincial MOH and the health facilities to include these human resources in the planning and especially in the budgeting of supervision and follow-up activities.

B.9/B.10 Financial Commitments of Counterparts

The MOH, the principle counterpart, carried out the following commitments:

In both provinces, the MOH provided furniture and physical space for HOPE offices in the MOH buildings, and paid for utilities.

To develop community activities, the MOH provided biologicals, teaching materials, ORS packets, and to a lesser degree, support for transport. Supplies were affected by MOH strikes and logistics difficulties (distribution of material to the health facilities).

In the immediate future, the MOH has not made formal commitments to fund supervision and follow-up activities of CHVs and TBAs.

B.11 In-Country Agencies Participating in Evaluations

The following organizations participated in the design, implementation, and analysis of mid-term and final evaluations:

USAID/Ecuador provided invaluable input from the beginning and has always shown demonstrated interest in the project.

The MOH and other NGOs, mentioned in this document, provided a significant support to the implementation.

At mid-term and final, external evaluators were hired, and MOH, Project HOPE field, and HOPE Center staff participated.

C. ATTEMPTS TO INCREASE EFFICIENCY

C.1 Strategies to Reduce Costs and Increase Productivity and Efficiency

- Programming in such a way that more communities could be covered with more activities in a shorter time. This represented an important budget reduction, at a greater effort on the part of the staff. The main strategy to achieve this was the micro-concentrations, where several communities met at a place of equal distance. The programming of transport to the communities was organized better, and this made it possible to cover neighboring communities. However, it also meant that sometimes staff had to stay overnight in the field.

- In the province of Azuay, HOPE and other NGOs developed a radio program to broadcast health messages to a greater number of communities. The program was broadcasted once a week.

- Reduction in meal and lodging expenses and staff travel allowances. Some of these expenses were shared with the communities.

- Students in their last year in the University of Cuenca Medical Technology School with a specialty in nutrition, nursing students in their final year at the School of Nursing of the Catholic University of Cuenca, and Peace Corps volunteers assisted the project staff in implementing the field activities. This additional staff needed just a minor amount of funding for transport to the community. With this strategy, more communities were covered and additional activities developed.

- Coordination with other NGOs was improved and resulted in shared vehicles, training teams, audiovisual equipment, and community expenses to carry out more effective activities at the community level and provide an integrated program. Sharing expenses was an advantage to all participants, and the coordinated activities increased the interest of the community.

- A system was developed for estimating costs by activity to reduce expenditures and increase the utilization of most efficient and effective activities (i.e., those which resulted in the most community participation).

- Because this was an extension project, it benefited from having a strong, motivated team with field experience, previously developed educational materials, and a functional administration system. All of this made it possible to improve efficiency by correcting errors and emphasizing the most successful activities. It permitted adequate and efficient coverage of the project area, especially the expansion zones, without diminishing productivity.

C.2/C.3 Lessons-Learned Regarding Efforts to Increase Efficiency

1. In this type of project, a procedure to estimate costs per activity is useful. After this project had information about approximate costs per activity, steps were taken to improve efficiency and increase coverage levels.

2. In projects that cover dispersed rural areas it is not appropriate to use the indicator "cost per beneficiary,' since it makes projects feel obligated to try to cover a large population. This means expanding to a geographical area that is too large and reduces overall effectiveness and efficiency.

3. Before starting this type of program, the availability of existing teaching materials, community procedures, information systems, and other NGOs working in CS must be explored to promote exchange of information, and to avoid duplication and unnecessary expenses.

D. COST RECOVERY ATTEMPTS

Because the counterpart of this project was the MOH, recovery of the cost of promotion, education, and CS activities was not considered. However, some cost recovery was possible by charging CHVs for teaching materials.

In addition, some fees were charged for the distribution of seeds and costs recovered were invested into buying new seed varieties to diversify family and community gardens.

E. HOUSEHOLD INCOME GENERATION

In this CS project family income generation was not planned, however, some families increased their inwme by selling part of the surplus of their family garden.

It is important to mention that Project HOPE carries out another program funded by USAID/ Washington of "Community Health Banks" in 20 of the CS targeted communities in Manabi. The objectives of this project are to increase family income, improve health status through health education, and advise mothers on how to use this income to benefit maternal and child health.

F. OTHER

F.1 Sustainability Promoting Activities

Sustainability-promoting activities were carried out during the project as follows:

Training of MOH staff from health facilities in community outreach techniques and in the training and supervision of CHVs and TBAs, improving the likelihood that these activities will continue in the future.

The MOH staff was involved gradually in CHVs' and TBAs' training and supervision. At the time of the final evaluation, some MOH staff were completely in charge of these activities and showed confidence and commitment to work with the community members. At some health facilities, this activity was made possible by designating one person who acted as the counterpart to Project HOPE in this activity.

Some volunteers were trained and thus legitimized in their function to implement child survival activities at the community level. In addition, their existing skills were complemented to meet some of the expectations of the community (course in first aid, basic health care).

Using a variety of activities (i.e., micro-concentrations, integrated health services, health fairs, health relays, health murgas, competitions of preparing nutritious dishes, "healthy child" contests, selection of breastfeeding queens and Community Health Center queens, etc.), the linkage between communities and MOH health facilities was developed and strengthened, and is expected to continue to evolve in the future.

The following DIP activities were implemented during the program:

> A referral system will be functioning between CHVs and TBAs and the MOH health facilities.

At the health facilities visited, this system is working (i.e., the presence of referral slips could be verified). The counter-referral system could be improved.

> The demand for preventive health services will increase.

In the interviews carried out with health facility staff, the increased demand for health services was attributed to the project, and these increased demands were met adequately. This aspect is confirmed by the final KPC survey, which shows an increase in health services utilization (e.g., vaccination, prenatal care, delivery and postpartum care).

> MOH staff will improve their technical skills.

There are no quantitative data to prove that the technical skills of MOH staff have improved, but during visits to the health facilities and community outreach activities, the evaluation team observed a good application of skills, and MOH staff said that the training they had received is useful in their daily work.

> Support will be provided to the process of decentralization and regionalization implemented by the MOH.

The main support for this process was the joint planning of monthly activities at the health facility and health area level, strengthening in this way the ability for decision-making at the local level. Additional activities were not undertaken, because the project did not emphasize

this component, and because of technical limitations of the HOPE field staff.

- This project will have contributed to developing a new model of integrated health services provision, community outreach, and community participation.

The development of a major project strategy, the micro-concentrations, is in itself a new model of providing integrated health services and promoting community participation. During these mass meetings, activities such as health promotion, prevention, education, and medical care were combined with participation of the MOH health center staff and other health agencies. This included activities such as early cervical-uterine cancer detection, family planning, lab and odontological services, and drugs provided by the MOH and some donated by Project HOPE.

Students from the university will have a more productive practicum.

Ten nutrition students carried out community outreach work with Project HOPE for five months, and had the opportunity of combining their knowledge on nutrition and public health in a practical application.

Three nursing students from the Catholic University participated in a community health work practicum for five months each.

A course on CS in the rural areas was organized with associations of doctors and rural nurses for their colleagues.

A Community Health and Child Survival Seminar was carried out with nurses who are obtaining their Masters degree in Growth and Development/Primary Health Care.

F.2 Establishment of a Health NGOs Coordinator

An important unplanned activity that was achieved was the establishment of a position of Health NGOs Coordinator at the provincial level. This promoted an exchange of materials and experiences and helped to coordinate the implementation of program activities. Project HOPE shared teaching matuials, its experience in information systems, and the KAP cluster survey methodology. In addition, the NGO Coordinator in the province of Azuay is developing, with PAHO/WHO support, a systematic approach based on the past experiences of working with CHVs and health promoters.

F.3 Evidence of Sustainability Potential

From interviews with the MOH staff at different levels, especially health facility staff, a positive appreciation of Project HOPE's work with CHVs and TBAs was noted. Most of the MOH staff expressed a willingness and intent to continue with the community outreach work.

III. EVALUATION TEAM

Evaluation team in both provinces:

AZUAY:

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Lcda. Carmen Alvarado, MOH Provincial Nurse
Dr. Francisco Moreno, Program Director/Ecuador
Dr. Judiann McNulty, HOPE Center
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MANABI:

Lit. Teresa Narváez, Project HOPE Provincial Coordinator
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Dr. Judiann McNulty, HOPE Center
Dr. Francisco Vallejo F., External Evaluator

This CS-VUI Fii Evaluation Report in Ecuador, was written by Dr. Francisco Vallejo with the assistance provided by Dr. Judiann McNulty and Dr. Francisco Moreno.

The Evaluation Team is grateful for the assistance provided by the MOH, HOPE staff, and community members.

APPENDIX 1

Project Accomplishments

APPENDIX 1. PROJECT ACCOMPLISHMENTS

1. IMMUNIZATION

OBJECTIVE 1: % OF CHILDREN WHO COMPLETED IMMUNIZATION SCHEME

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	50.0	75.0	75.0	100.0	50.0
Manabi	47.5	75.0	66.1	88.1	39.2
Average	48.7	75.0	70.5	94.0	44.6

OBJECTIVE 2: % OF WOMEN OF FERTILE AGE WITH TT2

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	3.4	30.0	15.3	51.0	348.5
Manabi	16.2	30.0	54.8	182.7	238.3
Average	9.8	30.0	35.0	116.8	293.4

OBJECTIVE 3: % OF MOTHERS TRAINED IN IMPORTANCE OF IMMUNIZATION

PROVINCE		GOAL	W F A	% COMPLETED	
Azuay		80.0	109.0	136.2	
Manabi		80.0	157.0	196.2	
Average		80.0	133.0	166.2	

OBJECTIVE 4: % OF MOTHERS WITH MORE KNOWLEDGE ON IMMUNIZATION

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	19.2	40.0	53.2	133.0	177.2
Manabi	41.8	61.0	65.8	107.9	57.4
Average	30.s	50.5	59.5	120.4	117.3

2. **DIARRHEAL** DISEASE CONTROL

OBJECTIVE 1: % OF CHILDREN RECEIVING LIQUIDS

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	42.9	55.0	58.4	106.2	36.1
Manabi	25.2	45.0	44.1	98.0	75.0
Average	34.0	50.0	51.2	102.1	55.5

OBJECTIVE 2: % OF CHILDREN RECEIVING ORS (PACKETS OR HOME-MADE)

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	12.2	40.0	25.8	64.5	111.5
Manabi	20.7	45.0	51.0	113.3	146.3
Average	16.4	42.5	38.4	88.9	128.9

OBJECTIVE 3: % OF MOTHERS WHO APPROPRIATELY MANAGE NUTRITIONAL NEEDS OF CHILD DURING AND AFTER DIARRHEA

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	0.5	20.0	3.6	18.0	610.0
Manabi	3.4	20.0	4.9	24.5	44.1
Average	1.9	20.0	4.2	21.2	327.0

3. NUTRITION

OBJECTIVE 1: % OF CHILDREN BREASTFEEDING EXCLUSIVELY (O-6 MONTHS)

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	33.3	43.0	37.8	87.9	13.5
Manabi	9.6	21.0	24.4	116.2	154.2
Average	21.4	32.0	31.1	102.0	83.8

OBJECTIVE 2: % KNOWLEDGE OF NUTRITION DURING PREGNANCY AND LACTATION

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	14.8	30.0	30.9	103.0	109.0
Manabi	28.8	45.0	44.8	99.6	55.6
Average	21.8	37.5	37.8	101.3	82.3

OBJECTIVE 3: % OF MOTHERS WITH GOOD NUTRITION PRACTICES

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	0.5	20.0	3.6	18.0	610.0
Manabi	3.4	20.0	4.9	24.5	44.1
Average	1.9	20.0	4.2	21.2	327.0

4. VITAMIN A

OBJECTIVE 1: NUMBER OF FAMILIES WITH GARDENS

PROVMCE		GOAL	W F A	% COMPLETED	
Azuay		454	1114	245.3	
Manabi		900	1500	166.6	
Average		1.354	2614	205.9	

OBJECTIVE 2: NUMBER OF MOTHERS PARTICIPATING IN VITAMIN A EDUCATION SESSIONS

PROVINCE		GOAL	W F A	% COMPLETED	
Azuay		**650**	**2538**	**390.4**	
Manabi		1.100	902	82.0	
Average		1.750	3440	236.2	

5. GROWTH MONITORING

OBJECTIVE 1: % OF CHILDREN PARTICIPATING IN GROWTH MONITORING

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	**24.6**	**45.0**	**43.2**	**96.0**	**75.6**
Manabi	**46.3**	**40.0**	**68.1**	**170.3**	**47.0**
Average	**35.4**	**42.5**	**55.6**	**130.1**	**57.1**

6. MATERNAL CARE

OBJECTIVE 1: % OF PREGNANT WOMEN COVERED WITH TT2

PROVINCE		GOAL	W F A	% COMPLETED	
Azuay		18.0	* 17.7	98.3	
Manabi		30.0	* 32.5	108.3	
Average		24.0	25.1	104.5	

* (Coverage Data are from the MOH)

OBJECTIVE 2: % OF PREGNANT WOMEN RECEIVING PRENATAL CARE

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	64.0	74.0	77.1	104.2	20.5
Manabi	71.6	82.0	88.7	108.2	23.9
Average	67.8	78.0	82.9	106.2	22.2

OBJECTIVE 3: % OF WOMEN WHO RECEIVED POST-PARTUM CARE

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	22.9	35.0	30.9	88.3	34.9
Manabi	37.1	48.0	43.5	90.6	17.2
Average	30.0	41.5	37.2	89.4	26.0

OBJECTIVE 4: % OF WOMEN WHO KNOW PREGNANCY COMPLICATION/ DANGER SIGNS

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	4.0	20.0	14.0	70.0	249.5
Manabi	7.8	20.0	23.4	117.0	200.0
Average	5.9	20.0	18.7	93.5	224.7

OBJECTIVE 5: NUMBER OF NEW **TBAs** TRAINED

PROVINCE		GOAL	W F A	% COMPLETED	
Azuay		**50**	**10**	**20.0**	
Manabi		**51**	**20**	**39.2**	
Average		101	30	29.7	

OBJECTIVE 5: NUMBER OF **TBAs** RECEIVING FOLLOW-UP/SUPERVISION

PROVINCE		GOAL	W F A	% COMPLETED	
Azuay		**72**	**72**	**100.0**	
Manabi		**96**	**96**	**100.0**	
Average		**168**	**168**	**100.0**	

OBJECTIVE 6: **%** OF MOTHERS USING MODERN FAMILY PLANNING METHODS

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	5.4	20.0	16.8	84.0	211.9
Manabi	30.8	44.0	38.9	88.4	26.3
Average	18.1	32.0	27.8	86.2	119.1

7. ACUTE RESPIRATORY INFECTIONS

OBJECTIVE 1: % OF MOTHERS SEEKING MEDICAL ADVICE

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	38.3	55.0	46.8	85.1	22.1
Manabi	44.3	60.0	50.5	84.2	14.0
Average	41.3	57.5	48.6	84.6	18.0

OBJECTIVE 2: % OF MOTHERS KNOWLEDGEABLE ABOUT DANGER SIGNS FOR PNEUMONIA

PROVINCE	B S	GOAL	W F A	% COMPLETED	% INCREASE
Azuay	15.3	30.0	31.6	105.3	106.8
Manabi	30.3	45.0	40.6	90.2	34.0
Average	22.8	37.5	36.1	97.7	70.4

APPENDIX 2

Final KPC Survey Results

CHILD SURVIVAL ACTIVITIES IN AZUAY AND MANABI PROVINCES/ECUADOR: A REPLICATION AND EXPANSION OF A SUCCESSFUL COMMUNITY OUTREACH MODEL

cs-VIII
Grant # FAO-0500-A-00-2050-00

KPC FINAL SURVEY

Submitted to

Agency for International Development
BHR/PVC/CSH
Washington, DC 20523

Submitted by

The People-to-People Health Foundation, Inc.
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February 1995

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TABLE OF CONTENTS

APPENDICES

ACRONYMS

ARI	Acute Respiratory Infection
CS	Child Survival
EPI	Expanded Program on Immunization
INEC	Instituto Nactional de Estadisticas
KPC	Knowledge, Practice, Coverage
MOH	Ministry of Health
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PVO	Private voluntary organization
TBA	Traditional Birth Attendant

I. INTRODUCTION

In November 1992, Project HOPE initiated its CS-VIII project in the provinces of Azuay and Manabi. This project extended CS activities in the CS-V cantons, expanded to include two additional cantons in Azuay and two in Manabi, and added AFU as a new intervention. All cantons were selected by the Ministry of Health (MOH). They are primarily rural, with difficulty in access to health facilities and services. To facilitate the review of this report, results for Manabi are presented in Part I, and results for Azuay in Part II.

PART I - MANABI

A. BACKGROUND

Project HOPE has worked in about 283 communities of the cantons Bolivar, Junín, Pichincha, Montemisti, Santa Ana, and 24 de Mayo. The population of about 93,000 inhabitants represents a total of 20.9 % of the population in the province of Manabi and is distributed over 1,73 1 km*.

In October 1992, Project HOPE implemented its baseline survey in the target area and used the information about the status of key indicators to set the end-of-project benchmarks for the objectives of the project. The project interventions in order of priority are as follows: diarrheal disease control (20%); matemal health and family planning (20%); nutrition (15 %); immunization (15 %); acute respiratory infections (15 %); Vitamin A (10%); and improvement of vital statistics (5%).

The primary focus of the project has been on community education for village health volunteers, traditional birth attendants, mothers, and other community members, using appropriate, effective, and low-cost technologies with the purpose of increasing community demand for preventive health care and providing limited delivery of direct services.

B. OBJECTIVES *OF* THE FINAL KPC SURVEY

- To assess the knowledge and practices of mothers of children less than two years of age in the various CS and maternal care interventions.
- To evaluate the achievements of the CS-VTlI project.
- To make information about project achievements available to the project counterparts to be considered in the programming of future activities and sustaining of project achievements.

II. METHODOLOGY

In 1991, USAID/FHA/PVC required PVOs with centrally funded CS projects to complete baseline and final KPC surveys, using the 30-cluster survey methodology and instrument

developed by the Child Survival Support Program (CSSP) of the Johns Hopkins University, with the assistance of US and international experts. The same methodology was used at project end. The questionnaire was updated slightly, however without making conceptual changes.

A. QUESTIONNAIRE

The survey instrument included questions about the knowledge and practices of mothers with children under two years of age with respect to the major project interventions, as well as questions about prevalence of diarrhea and ARI and immunization coverage levels. In addition, based on the recommendations of the external midterm evaluator, several questions were added to better assess the Vitamin A intervention and exclusive breastfeeding practices (see Appendix A for a copy of the instrument).

The generic questionnaire of the CSSP contains 44 questions. Project HOPE/Ecuador's final KPC questionnaire consisted of 50 questions. The first five questions referred to general information about mother and child; questions 6 to 11 covered breastfeeding and child nutrition; 12 and 13, Vitamin A; 14 and 15, growth monitoring; 17 to 26, diarrheal diseases; 27 to 31, acute respiratory infections; 16, 32 to 35, immunization; 36 to 49, maternal care; and 50, maternal participation in the education events of the CS-VIII project.

B. DETERMINATION OF SAMPLE SIZE

Sample Size

Sample size was calculated using the following formula:

$$n = z^2 * (p*q)/d^2$$

Where n = sample size; z = the statistical certainty chosen; p = the estimated prevalence or coverage level; q = 1 - p; and d = level of precision desired, usually between 5 % and 10 % .

The p value is defined in relation to the intervention or coverage rate that requires the largest sample size (p = .5). The value d depends on the precision, or margin of error, desired (in this case d = .1). The statistical certainty was chosen to be 95% (z = 1.96). Given the above values, the sample size (n) needed was determined to be:

$$n = (1.96 \cdot 1.96)(.5 * .5) / (.1 * .1)$$
$$n = (3.84)(.25) / .01$$
$$n = 96$$

It takes time to randomly select an individual from a survey population and then perform this selection 96 times to identify a sample of n = 96. Time can be saved by doing a 30 *cluster survey* in which several individuals within each cluster are selected to reach the required sample size. However, in order to compensate for the bias introduced by interviewing persons in

clusters, rather than randomly selected individuals, experience has shown, given the values of p, d, and z above (Henderson et al., 1982), that a minimum sample of 2 10 (7 per cluster) should be used. In general, when using a 30 cluster sample survey, the sample size should be approximately double the value of n, when n = (z * z) (pq) / (d * d). In this case, a sample size of 240 (8 per cluster) was selected to ensure that sub-samples would be large enough to obtain useful management information.

C. SELECTION OF THE SAMPLE

Population Size

Because of the unreliability of local census information, the sampling interval was calculated in the following manner:

To develop a comprehensive list of all communities, a list of the communities covered by staff was generated by the computer. The population of each community was estimated with information provided by the MOH Malaria Program. For communities were this information was unavailable, the project nurse responsible for that particular canton provided a population estimate. Then communities that had only participated in micro-concentrations were added. Finally, a list of 283 communities with a population of 116,668 was obtained (see Appendix B).

Sampling Interval

The following formula was used to determine the sampling interval:

sampling interval = Total population / # of clusters

116,668 / 30 = 3,889

Random Number

A number equal or less than tbe sampling interval was selected at random. This number was 1,413. The first community that contained this number was selected as the first cluster. The second cluster was obtained by adding the random number to the sampling interval. For the following clusters the sampling interval was added and the community containing the obtained number selected.

Selection of the First House in Each Cluster

Bach interviewer went to the center of the village/town and selected the direction in which to proceed by spinning a bottle or pencil. After selecting the house where to start the survey, the interviewer determined whether the family had a child under two years of age, conducted the interview and proceeded to the closest house, until eight interviews had been completed.

D. TRAINING OF SUPERVISORS AND INTERVIEWERS

The survey team consisted of project staff, health volunteers, staff of other NGOs, and MOH counterparts. Project HOPE staff that had had experience with the midterm survey served as supervisors. Training could be completed in a single day, because the volunteers were already familiar with the questionnaire. The following issues were reviewed:

Administrative aspects
Objectives of the KPC survey
Methodology for sample selection
Methodology to select the first house
Review of the questionnaire
Role-play and practice
Supervision
Review of problems with supervisors
Pilot testing of questionnaire
Assignment of clusters
Distribution of materials

E. SCHEDULE

DATE	A C -
11/ 7-11 /94	Development of community list and population figures Selection of clusters
12/ 3 /94	Training of supervisors and interviewers
12/ 14-16 /94	Survey implementation and data entry
1/ 11 /95	Tabulation and analysis of results
1/21- 2/21 /95	Preparation of final KPC survey report
2/ 22 /95	Presentation of results to counterparts

F. SURVEY IMPLEMENTATION, DATA ENTRY, AND ANALYSIS

To implement the survey, five work teams were created, each consisting of a supervisor and two interviewers. 240 interviews were conducted over a three-day time span. Three of the surveys contained errors. Two questionnaires could be corrected by reinterviewing the mother in the community, but one had to be eliminated, leaving 239 valid questionnaires.

The data were entered and processed with EPI Info, version 5. Frequencies were obtained for each question. In addition, communities were divided into those that had received five or more visits, and by whether mothers had attended health education sessions. The results for the latter group were higher than for mothers that had not attended.

Subsequently, the data from the baseline and final KPC survey were compared question by question and the table of USAID indicators (see Appendix C) created.

III. RESULTS

A. GENERAL INFORMATION

The mean age of mothers with children under two was 26.2 years, with a range of 14 to 46; 80.3% of women were between 18 and 35. The mean age of children was 10.5 months. About one fifth (19.2%) of women were illiterate. The remainder had attended school and/or were able to read.

Sixty-three percent of the women were not economically active; 13.4% worked in agriculture; 10.5% produced handicrafts; and 8.8% worked as maids. When mothers have to leave the home, 51.9% of the young children stay with relatives; 33.1% of the mothers take them along; and 19.7% are supervised by older siblings.

B. BREASTF'EEDING AND NUTRITION

Almost all mothers (98.3%) had breastfed their child at some point in time, and 68.6% were breastfeeding at the time of the survey; 62.6% had initiated breastfeeding within one hour of delivery and a further 20.0% within the first eight hours. One third of infants 0 - 4 months and 25 % of children from 0 - 6 months were exclusively breastfed. Of the children 20 to 23 months, 5% continued to receive breastmilk. Two thirds of children 7 - 9 months received complementary foods

Maternal knowledge on how to breastfeed more successfully is improving. Only 3.8 % of mothers had no idea on what to do. The following responses were provided: breastfeed immediately after birth: 13%; breastfeed frequently: 17.2%; take care of breasts and nipples: 5.9%; breastfeed exclusively: 3.8%; don't give bottles: 5%; drink more liquids: 83.7%; eat a good diet: 52.3%; and eat more: 47.3 %. The majority of mothers (70.8%) report that they do not give a bottle to the child. Slightly more than half of the mothers (52.3 %) state that complementary foods should be initiated at 4 - 6 months, and 21.8% after six months.

c . VITAMIN A

Only 20.9% of mothers could not list a source of Vitamin A; 32.2% of mothers could cite six sources; 26.4% five; 8.8% listed four; 5% three; 3.8% two; and 2.9% one source. In terms of the role of Vitamin A, 30.1% stated that it prevents disease; 17.2% that it prevents ARI; 15.1% that it prevents diarrhea; 17.2% that it helps the child to recover from disease; and 7.5% that it prevents night blindness. An additional 44.4% reported other benefits, almost half of these responses relating to the positive impact on the physical growth of the child.

D. GROWTH MONITORING AND PROMOTION

Almost all children (94.6%) had growth monitoring cards and only 2.9% had lost it. More than two thirds **(68.1%) of the children with** growth monitoring cards had been weighed in the three months preceding the survey.

E. **DIARRHEAL** DISEASE CONTROL

Mothers reported that 42.7% of children experienced a diarrheal episode (defined as at least three loose stools a day) in the two weeks preceding the survey. During that episode, 89.6% of the children still breastfeeding received the same or more breastmilk. Of those children not breastfed exclusively, 79.4 **%** received the same **or** more liquids and 52.6% received the same or more **solid or semi-solid foods.**

MATERNAL PRACTICES	
Same or more breastmilk	**89.6%**
Same or more liquids	**79.4%**
The same or more semi/solid foods	**52.6%**
TREATMENTS PROVIDED	
ORT	**70.6%**
Gave medications	**44.1%**
Gave nothing	9.8%

Slightly more than half (55.9%) **of** the mothers whose children had diarrhea sought advice or help: 38.696% **went** to **a** hospital, health center or health **post;** 19.3% to a private clinic or physician; 33.3% **asked relatives our** friends; 10.5% went to a traditional healer; and 3.5% each **consulted a community health volunteer or** went to a pharmacy. **Mothers** reported that they took **the following important** actions when their child had diarrhea: 26.5% gave liquids; 16.7% used **ORS packets or prepared homemade ORT; 18.6% took the child to a health facility; 12.7% gave** more liquids **than** usual; 4.9% have **food** more frequently; 4.9% gave more food during the recovery **period;** 36.8% took their child to the hospital and 4.9% to **a private** physician. The 18.6% of **other responses** focused mainly on the use of medications and home remedies.

The following **signs and** symptoms would cause mothers to seek help for a child with diarrhea:

Overall weakness and apathy:	32.6%
Persistent diarrhea (more than three days):	**38.9%**
Loss of appetite:	23.4%
Dehydration:	26.8%
Fever:	54.4%

vomiting:	**42.7%**
Blood in stool	15.9%

Only 4.2% of mothers could not report any danger sign.

Mothers listed the following recommended actions when children experience episodes of diarrhea: **54.4%** recommend that the child be taken to the hospital, health center, or health post of the MOH, Social Security, **or** to a private physician; 57.3% said that children should be given ORT; 45.2 **%** mentioned giving liquids; 20.9 **%** recommended giving more liquids than usual; and 14.6 % and 9.696, respectively, stated to give food more frequently or to give more food during recovery. **Of the 30.5% of** "other **responses,"** breastfeeding accounted for 20.5 % , followed by **responses such as** giving medications, and taking care of the child, etc.

F. ACUTE RESPIRATORY INFECTIONS

The percentage **of children** with coughs or colds was 66.5 **%,** and 95 (59.7%) of these children had difficulty breathing. The majority of mothers (75.8 **%)** sought help for children with difficult breathing **from the following sources:**

Hospital/health center/post	**48.6%**
Private physician or clinic	**20.8%**
Health volunteer	**2.8%**
Friends/relatives	31.9%
Pharmacy	**6.9%**
Traditional healer	**5.6%**

Mothers were able to list the following danger signs of pneumonia: rapid and difficult breathing **(59.8%); cough (59.8%); fever (52.3%); chest indrawing (22.2%);** loss of appetite (16.3%); 37.2 other responses were elicited, among others 38.2% mentioned bronchitis and 19.1% wheezing.

G. IMMUNIZATION

According to the mothers, almost all of the children (98.7%) had been vaccinated at least once. **Immunization** coverage **rates for** children 12 - **23** months with immunization cards is as follows:

VACCINE	1st DOSIS	2nd DOSIS	3rd DOSIS
BCG	92.0%		
DPT	96.0%	92.1%	79.2%
OPV	96.0%	92.1%	79.2%
Measles	87.1%		

71.3% of all children 12 - 23 months are completely immunized. In terms of knowledge about immunization, 58.2% of mothers knew that infants should be immunized against measles at nine months; half (50.2%) were aware that tetanus toxoid protects both the mother and the child; and 89.1% knew that two or more doses are needed for full protection.

H. MATERNALCARE

Of the mothers interviewed, 66.1% had a maternal health card and 14.2% reported that they had lost it. The majority of the mothers with maternal health cards (81.6%) had received two or more dosis of 'IT (and 12.7% one dosis), representing a conservative estimate of TT2 coverage of 54% of women with children under two.

More than two thirds of mothers (78.7%) know that it is best to space pregnancies two or more years apart, and only 6.3 % report that they do not know. The pregnancy rate in the group interviewed was 6.3%. Of the non-pregnant women, 80.3 % of mothers did not desire another child in the next two years or were unsure, and 55.6% of these were using the following family planning methods:

Male/female sterilization:	13%
Pill	36%
IUD	12%
Condoms:	8%
Exclusive breastfeeding:	7%
Rhythm and coitus interruptus	19%

More than three-fourths (84.1%) of all women knew that prenatal care should be initiated during the first trimester. With respect to danger signs/complications during pregnancy, 36.4% mentioned contractions; 47.3% bleeding; 40.6% frequent vomiting; 22.2% edema; 21.8% dizziness; 19.2% fever; 38% headaches; 11.3% painful urination; 14.6% vaginal discharge; and 5.4% convulsions. The 26.8 % of other responses included miscarriage and lack of appetite, among others. Most women (88.7%) had received some prenatal care during the last pregnancy, 84% at a hospital or health center; 24.5% at a private clinic or physician; and 13.2% with a TBA. With respect to food consumption during pregnancy, 44.8% consumed more than usual; 36% the same as usual; and 19.2% less than usual. Somewhat less than half of the women (43.5 %) received a post-partum check-up with a health professional after the last delivery. About half of the women (52.7%) were delivered by health professionals; 41% by a TBA; and 5% by a family member.

I. ATTENDANCE AT HEALTH EDUCATION MEETINGS

Of the women interviewed, 42.3% had not participated in any health education e-vent; 30.5% had participated in educational meetings; 30.1% had received a home visit; 14.2% had been involved in a health micro-concentration; 8.8% in a health fair or rally; and 4.2% had listened to messages on the radio, seen role plays, etc.

IV. DISCUSSION

Appendix D contains detailed information about the baseline and final KPC survey results for Manabi.

A. GENERAL INFORMATION

When compared to the baseline KPC survey, there was little difference in the age of mothers and children targeted in this interview. According the final KPC data, 19.2% of women with children under two are illiterate. This is very similar to the illiteracy rate reported by INEC in the 1990 Census for rural **women in Manabi. Because of the overall** low educational levels of women in the target area, the participatory health **education** strategy employed by project staff **appears most appropriate.**

The percentage of women who are not economically active has increased from 49.8 % at baseline to 63.6% at project end. It is not clear whether this represents an **overall** improvement in family income **or in fewer opportunities** for women to be economically active. Predominant activities of women are agriculture and **rasing** of animals (13.4%) and handicrafts (10.5%). The observed reduction in the number of women involved in agriculture may be due to the time of the year and **weather** conditions. Involvement of mothers in income generating activities is not a major barrier to participation in health related events. Aside from educating mothers, project staff also focused on other family **members** and friends who are a major source of child care when the mother is not in the home.

B. BREASTFEEDING AND NUTRITION

Breastfeeding of all infants remains a cultural norm. Een though breastfeeding practices remain **inadeqate,** some significant improvements can be noted in comparing baseline to project end data:

PRACTICE	BASELINE	FINAL
Initiation within one hour eight hours	 50.4% 74.3%	 62.6% 82.6%
Exclusive b-g four months sixmalths	 11.1% 9.6%	 33.3% 24.0%
Introduction of complementary foods (7 - 9 months)	62.5%	67.9%
Persistence of breastfeeding (20 - 23 mods)	22.6%	5.0%

The promotion of long durations of breastfeeding was not a message transmitted by the project, because improving breastfeeding practices during the first few months of life appeared of greater priority to assure infant survival. Promotion of long durations of breastfeeding is an apparent unmet need.

Some improvements were also noted in mothers' knowledge on how to breastfeed successfully, and more mothers knew that complementary foods should be introduced after the first six months (15.7% vs. 21.8%).

As can be seen in the DIP, women's knowledge about the nutritional needs of the pregnant and lactating woman was an important priority and increased from 44.8% to 55.6%.

Over the 28 months of the CS-VIII project, numerous education events have focused on breastfeeding and nutrition with 47,315 individuals participating. The majority of these activities occurred during the first 14 months of the project (see Educational Activities, Appendix E),

C. GROWTH MONITORING

The percentage of children with growth monitoring cards increased significantly from 77.3 % at baseline to 94.6% at project end. This is due to the fact that staff were distributing growth monitoring cards at all immunization and growth monitoring sessions and the obvious value mothers place on this card (only 2.9% reported that they had lost the card). In addition, there has been a change in the practices of mothers and/or Ministry of Health staff with respect to monitoring the growth of young children: At project end, 68.1% of children had been weighed in the three months preceding the survey compared to only 46.1% at baseline.

D. DIARRHEAL DISEASE CONTROL

The percentage of children with diarrhea in the two weeks preceding the survey is only slightly higher than at baseline (final: 42.7% vs. baseline: 38%). With respect to nutritional management of diarrheal episodes, breastfeeding the same amounts or more remains high and almost unchanged since baseline (baseline: 86.9%, final: 89.6 %). Improvements were noted in the continuation of the same or more liquids (baseline: 60.5% vs. final: 79.4%) and the feeding of solid and semi-solid foods (baseline: 38.4% vs. final: 52.6%). When using the USAID indicator for oral rehydration, use of ORT has increased from 44.8% at baseline to 70.6% at project end.

28,073 individuals attended health education and promotion sessions that focused on the management of diarrheal episodes (see Appendix F).

E. ACUTE RESPIRATORY INFECTIONS

More mothers sought help from health professionals for children with difficult breathing (baseline: 43.096, final: 50.5%). Knowledge of some of the danger signs of pneumonia improved (rapid breathing: 49.4% vs. 59.8%; chest indrawing: 5.3% vs. 22.2%; loss of appetite: 5.3% vs. 16.3%; fever: 49.4% vs. 52.3%; and cough: 42.4% vs. 52.7%).

The project emphasized education about ARI and pneumonia in the last 12 months due to changes in MOH norms, and 15,517 individuals participated in educational sessions on ARI (see Appendix E).

F. IMMUNIZATION

Good improvements were also made in EPI. Virtually all children had been vaccinated at least once (98.7% vs. 86.5% at baseline), demonstrating good access. The number of mothers knowledgeable about the correct age for having their children vaccinated against measles doubled (baseline: 28.8%, final: 58.2%), as did knowledge about the reason for immunizing pregnant women against tetanus (baseline: 24.9% vs. final: 50.2%). More mothers were aware that two or more dosis of TT are needed for full protection (baseline: 71.6% vs. final: 89.1%). Knowledge also resulted in changed immunization practices, verified with immunization cards of children 12 - 23 months. Access (DPT1) was 79.8% at baseline compared to 89% at project end, and drop-out rates reduced from 26.6% to 17.5% by project end. More children were immunized against measles (baseline: 53.5 % vs. final: 80.7 %), and complete coverage rates for BCG, DPT, OPV, and measles improved from 47.5 % to 66.1%. The same positive results were obtained for the TT2 coverage of women with children under two (16.2 % at baseline, vs. 54.8 % at project end).

G. MATERNALCARE

More than twice as many mothers had maternal health cards at project end (27.1% vs. 66.1%), and verified TT2 coverage rates have improved, as specified in the section on Immunization. Two maternal health cards are in use, one for prenatal care, and a women's health card that contains information about TT vaccinations, family planning, and participation in cancer screening.

Participation in prenatal and postpartum care has become more important to the women; at baseline 71.6% had received prenatal care and 37.1% postpartum care compared to 88.7% and 43.596, respectively, at project end. The percentage of women who do not desire further children in the next two years or are uncertain has remained relatively stable. However, the percentage of women who state that they are using a family planning method has increased from 35.96 to 55.6% at project end, as has the use of modem family planning methods of the former group (baseline: 30.8% vs. final: 38.9%). Improvements were also noted in mothers' knowledge of danger signs or complications during pregnancy. In addition, an increased percentage of women were delivered by health professionals (baseline: 39.7% vs. final: 52.7%) which should have a positive impact on maternal health.

PART II - AZUAY

A. BACKGROUND

Project HOPE has worked in a total of 320 communities in the cantons Girón, Gualaceo, Paute, Sigsig, Santa Isabel, Nabón, and Oña, corresponding to health areas 7, 8, 9, 10, 11, and 12. The population of about 88,000 inhabitants represents a total of 17.5% of the population in the province of Azuay and is widely dispersed over 4,121 km^2. The target population consists of 19,929 women of fertile age, 2,300 children under one, and 10,575 children under five years of age.

In November 1992, Project HOPE implemented its baseline survey in the target area and used the information to set the end-of-project benchmarks for the objectives of the project. The project interventions in order of priority are as follows: diarrheal disease control (20%); maternal health and family planning (20%); nutrition (15%); immunization (15%); acute respiratory infections (15%); Vitamin A (10%); and improvement of vital statistics (5 %).

The primary focus of the project has been on community education for village health volunteers, traditional birth attendants, mothers, and other community members, using appropriate, effective, and low-cost technologies, with the purpose of increasing community demand for preventive health care and providing limited delivery of direct services.

B. OBJECTIVES OF THE FINAL KPC SURVEY

- To assess the knowledge and practices of mothers of children less than two years of age in the various CS and maternal care interventions.
- To evaluate the achievements of the CS-VIII project.
- To make information about project achievements available to the project counterparts to be considered in the programming of future activities and sustaining of project achievements.

II. METHODOLOGY

In 1991, USAID/FHA/PVC required PVOs with centrally funded CS projects to complete baseline and final KPC surveys, using the 30-cluster survey methodology and instrument developed by the Child Survival Support Program (CSSP) of the Johns Hopkins University, with the assistance of US and international experts. The same methodology was used at project end. The questionnaire was updated slightly, however without making conceptual changes.

A. QUESTIONNAIRE

The survey instrument included questions about the knowledge and practices of mothers with children under two years of age with respect to the major project interventions, as well as

questions about prevalence of diarrhea and ARI and immunization coverage levels. In addition, based on the recommendations of the external midterm evaluator, several questions were added to better assess the Vitamin A intervention and exclusive breastfeeding practices.

The generic questionnaire of the CSSP contains 44 questions. Project HOPE/Ecuador's final KPC questionnaire consisted of 50 questions. The first five questions referred to general information about mother and child; questions 6 to 11 covered breastfeeding and child nutrition; 12 and 13, Vitamin A; 14 and 15, growth monitoring; 17 to 26, diarrheal diseases; 27 to 31, acute respiratory infections; 16, 32 to 35, immunization; 36 to 49, maternal care; and 50, maternal participation in the education events of the CS-VIII project (see Appendix A for a copy of the instrument).

B. DETERMINATION OF SAMPLE SIZE

Sample Size

Sample size was calculated using the following formula:

$$n = z^2 * (p*q)/d^2$$

Where n = sample size; z = the statistical certainty chosen; p = the estimated prevalence or coverage level; q = 1 - p; and d = level of precision desired, usually between 5 % and 10%.

The p value is &fined in relation to the intervention or coverage rate that requires the largest sample size (p = .5). The value d depends on the precision, or margin of error, desired (in this cased= .l). The statistical certainty was chosen to be 95% (z = 1.96). Given the above values, the sample size (n) needed was determined to be:

$$n = (1.96 \bullet 1.96)(.5 * .5) / (.1 * .1)$$
$$n = (3.84)(.25) / .Ol$$
$$n = \%$$

It takes time to randomly select an individual from a survey population and then perform this selection % times to identify a sample of n = 96. Time can be saved by doing a 30 *cluster survey* in which several individuals within each cluster are selected to reach the required sample size. However, in order to compensate for the bias introduced by interviewing persons in clusters, rather than randomly selected individuals, experience has shown, given the values of p, d, and z above (Henderson d al., 1982), that a minimum sample of 210 (7 per cluster) should be used. In general, when using a 30 cluster sample survey, the sample size should be approximately double the value of n, when n = (z * z) (pq) / (d * d). In this case, a sample size of 240 (8 per cluster) was selected to ensure that sub-samples would be large enough to obtain useful management information.

C. SELECTION OF THE SAMPLE

Population Size

Because of the unreliability of local census information, the sampling interval was calculated in the following manner:

Project HOPE had worked in ***328*** communities for the duration of the grant.

Each cantonal nurse provided an estimate of the approximate number of families in the communities in her catchment area. This listing of the communities and their population size was compared to the census list by sector that had been used for the baseline survey. In census sectors with more than one community, the data provided by the staff were used. In census sectors with only one community and discrepancies between staff and census data, the mean was used. Using this method, a target population of 87,873 was obtained.

30 clusters were selected from these ***328*** communities (see Appendix F).

Sampling Interval

The following formula was used to determine the sampling interval:

sampling interval = Total population **/ #** of clusters

87,873 / 30 = 2,929

Random Number

A number equal or less than the sampling interval was selected at random. This number was ***2,257.***

Selection of the First House in Each Cluster

Each interviewer went to the center of the village/town and selected the direction in which to proceed by spinning a bottle. For communities with less than eight families with mothers of children under two, interviewers were instructed by their supervisors to go to the closest community that was listed in the general list of all communities to complete the eight interviews required for each cluster.

D. TRAINING OF SUPERVISORS AND INTERVIEWER!3

The survey team was trained and supervised by Dr. Francisco Moreno, Project HOPE' s Program Director for Ecuador. The survey team consisted of project staff, health volunteers, staff of

other NGOs, and several students that were completing their community practicum experience with Project HOPE. The supervisors in this final KPC survey were the same as in the midterm KPC survey. This made it possible to complete training of supervisors and interviewers in only two days.

my 1:

Administrative aspects
Objectives of the KPC survey
Methodology for sample selection
Methodology to select the first house
Review of the questionnaire
Role-play and practice
supervision
Review of problems with supervisors

my 2:

Pilot testing of questionnaire
Administrative matters
Assignment to groups
Assignment of clusters
Distribution of materials

E. SCHEDULE

DATE	ACTIVITIES
1/ 11-13 /95	Development of community list and population figures Selection of clusters
1/ 16-17 /95	Training of supervisors and interviewers
1/ 18-20 /95	Survey implementation
1/ 23-25 /95	Data entry
1/ 26 /95	Verification of data/reinterviewing
1/ 27 /95	Tabulation and analysis of results
1/2 - 2/10 /95	Preparation of final KPC survey report
2/ 13 /95	Presentation of results to counterparts

F. SURVEY IMPLEMENTATION, DATA ENTRY, AND ANALYSIS

To implement the survey, six work teams were created, each consisting of a supervisor and three

interviewers. 240 interviewers were conducted over a three-day time span. Eight of the surveys contained errors. Four questionnaires could be corrected by reinterviewing the mother in the community, but four had to be eliminated, leaving 236 valid questionnaires.

The data were entered and processed with EPI Info, version 5. Frequencies were obtained for each question. In addition, communities were divided into those that had received five or more visits, and by whether mothers had attended health education sessions. The results for the latter group were higher than for mothers that had not participated.

Subsequently, the data from the baseline and final KPC survey were compared question by question and the table of USAID indicators (see Appendix G) created.

III. RESULTS

A. GENERAL INF'ORMA'I'ION

The mean age of mothers with children under two was 27.6 years, with a range of 15 to 44; the mean age of children was 10.2 months, and 41.5% were between 12 and 23 months. Only 7.6% of women were illiterate. The remain&r had attended school and were able to read. Most of the women were working outside of the home; 66.1% were involved in agriculture, including the raising of animals and 50% in handicrafts (weaving, hats). Only 10.6% did not work outside the home. When mothers have to leave the home, 72.9% take their child with them, 31.4% leave him/her under the supervision of relatives, and 24.6% in the care of an older sibling.

B. BREASTFEEDING AND NUTRITION

Almost all mothers (235) had breastfed their child at some point in time; 35.7 % had initiated breastfeeding within one hour of delivery and a further 31.9% within the first eight hours. At the advice of the external midterm evaluator, two types questions were asked to establish exclusive breastfeeding rates. The first asked mothers directly "Do you give your child anything to eat or drink in addition to breastmilk?" Exclusive breastfeeding rates were established indirectly by eliminating all mothers responding affirmatively to questions whether they were providing various foods or liquids to the child. Because of a change in national norms to promote exclusive breastfeeding for the first six months rather than only the first four months, rates were calculated for both time intervals. The obtained information is very similar.

Exclusive Breastfeeding		
Question	0 - 3 months	0 - 6 months
Direct method	37.8%	63.4%
Indirect method	41.5%	61.0%

Of the children 20 to 23 months, 16.7% continued to receive breastmilk.

Maternal knowledge on how to breastfeed more successfully is low. Only one mother stated that breastfeeding immediately after &livery increases the likelihood of success; another mother mention& the importance of caring for breasts and nipples; and two mothers knew that frequent suckling increases the amount of breastmilk. And no mother mentioned that bottle-feeding reduces breastmilk production and success. The importance of eating more, taking more liquids, and eating a greater variety of foods was mentioned by 42.496, 35.296, and 31.3% of mothers, respectively. With respect to introducing complementary foods, 35.6% of mothers recommended to start between 4 - 6 months; 29.296, before four months; and 28.8% after six months.

C. *VITAMINA*

Mothers could list an **average of 2.6** foods that are rich in vitamin A; 36.4% of mothers could not cite any food; 11.9% listed four, 19.5% five, and 11.9% six foods. Slightly less than half **(47.5%) of mothers did** not know about the role of vitamin A; 22% stated that it prevents disease; 12.3% that it helps that child recover from illness; 4.7% that it prevents ARIs; and 3.4% **that it prevents other infections.**

D. GROWTH MONITORING AND PROMOTION

Three-fourths of all mothers had a growth monitoring card for their child, and only 8.1% reported that they had lost it. Almost half of the children (42.8 %) with growth monitoring cards had been weighed in the three months preceding the survey.

E. DIARRHEAL DISEASE CONTROL

Mothers reported that 42.8% of children experienced a diarrheal episode (defined as at least three loose stools **a day) in the two weeks preceding the survey. During that episode, 81.7%** of the children still breastfeeding received the same or more breastmilk. Of those children not breastfed exclusively, 81.1% received the same or more liquids, and 32.2 % received the same or more **solid or semi-solid foods.**

MATERNAL PRACTICES	
Same or more breastmilk	81.7%
Same or more liquids	81.1%
The same or more semi/solid foods	32.2%
TREATMENTS PROVIDED	
ORT	67.3%
Gave medications	42.6%
Gave nothing	14.9%

Slightly more than half (56.4%) of the 101 mothers whose children had diarrhea sought advice or help: 52.6% went to a hospital, health center or health post; 15.8% to a private clinic or physician; 33.3 % asked relatives or friends; 8.8 % went to a traditional healer; and 5.3 % consulted a community health volunteer. Mothers reported that they took the following important actions during that last diarrheal episode: 54.4% gave liquids; 28.1% use ORS packets or prepared ORT; 22.8% gave more liquids than usual; 5.3 % gave food more frequently; 1.8% gave more food during the recovery period; 36.8% took their child to the hospital; and 8.8% to a private physician.

The following signs and symptoms would cause mothers to seek help for a child with diarrhea:

overall weakness and apathy:	41.9%
Persistent diarrhea (more than three days):	37.3 %
Loss of appetite:	28.0%
Dehydration:	27.5%
Fever:	22.0%
vomiting:	18.6%

Twenty-one mothers (8.9%) could not report any danger sign.

Mothers listed the following important actions when children experience episodes of diarrhea: 60.6% recommend that the child be taken to the hospital, health center, or health post of the MOH, Social Security, or to a private physician; 49.2% said that children should be given ORT; 40.7% mentioned giving liquids; 32.2% recommended giving more liquids than usual; and 5.1% and 4.296, respectively, stated to give food more frequently or to give more food during recovery. Of the 80 mothers that provided other alternatives, 61.3% mentioned antidiarrheals and 17.5% home treatments.

F. ACUTE RESPIRATORY INFECTIONS

More than half of the children in the survey (55.5%) had a cough or cold in the two weeks preceding the survey; and 58.8% of these had difficulty breathing. Of this latter group, 61% of mothers sought help from the following sources:

Hospital/health center/post:	57.4%
Private clinic/physician:	19.1%
Friends/relatives:	36.2%
Volunteers:	6.4%
Pharmacy:	4.3%

In terms of danger signs that would make them seek help, 50.8% of mothers mentioned fever; 44.5% rapid breathing; 40.7% cough; and 19.9% loss of appetite. Only 3% of mothers listed chest indrawing as a danger sign.

H. MATERNAL CARE

Of the mothers interviewed, 30.5% had a maternal health card, and 16.1% reported that they had lost it. Half of the mothers with maternal health cards had received two or more dosis of TT and 37.5% one dosis, representing a conservative estimate of TT2 coverage of women with children under two of 15.3%

More than two thirds of mothers (69.1%) know that it is best to space pregnancies two or more years apart, and 20.8 % do not know. The pregnancy rate in the group interviewed was 5.5 %, while 2.5% were not sure they were pregnant. 83.1% of mothers did not desire another child in the next two years or were unsure, and 3 1.1% of these were using the following family planning methods:

Natural family planning:	41%
Male/female sterilization:	23%
Pill	9.8%
IUD	8.2%
Condoms:	8.2%
Exclusive breastfeeding:	4.9%

Three-fourths (78.4%) of all women knew that prenatal care should be initiated during the first trimester. With respect to danger signs/complications during pregnancy, 44.9% mentioned contractions; 28% bleeding; 22% frequent vomiting; and 21.2% headaches. More than three-fourths (77.1%) of the women had received some prenatal care during the last pregnancy, 78 % at a hospital or health center; 24.7% at a private clinic or physician; and 26.4% with a TBA. With respect to food consumption during pregnancy, 30.9% consumed more than usual; 41.5% the same as usual; and 27.5% less than usual. Approximately one third (30.9%) of the women received a post-partum check-up by a health professional after the last delivery. 39% of the women were delivered by a TBA; 38.6% by a health professional; and 17.4% by a family member.

L A'ITENDANCE AT HEALTH EDUCATION MEETINGS

60.2% of the women interviewed had participated in an educational event of the project or other agency. About half (53.8%) participated in an educational or promotional event; 11.4% had received a home visit; and 5.9% had participated in a micro-concentration on health.

IV. DISCUSSION

Appendix H contains de&ailed information about the baseline and final KPC survey results for Azuay.

A. GENERAL INFORMATION

When compared to the baseline KPC survey, there was little difference in the age of mothers and

children targeted in this interview. The percentage of women that cannot read (7.6%) is much below the 23% illiteracy rate for rural women in Azuay reported by INEC in 1990 and the rate of 19.9% obtained in the baseline survey. However, because the overall educational levels remained low, the participatory educational strategy used by the project was appropriate. The percentage of women who are economically active has increased since baseline from 80.1% to 89.4%. This may be an indication of the deterioration of the economic situation in the country. Predominant activities of women are agriculture and raising of animals (66.1%) and handicrafts (50%). Increased need to be economically activities increases the time burden of women and makes participation in other activities more difficult.

B. BREASTFEEDING AND NUTRITION

Breastfeeding of all infants remains a cultural norm. However, breastfeeding practices remain inadequate, even though some improvements can be noted from baseline to project end:

PRACTICE	BASELINE	FINAL
Initiation within		
one hour	28.8%	35.7%
eight hours	52.1%	67.6%
Exclusive breastfeeding		
four months	43.8%	61.0%
six months	33.3%	41.5%
Introduction of complementary foods (7 - 9 months)	32.1%	53.6%
Persistence of breastfeeding (20 - 23 months)	43.6%	16.7%

Some improvements were also noted in mothers' knowledge on how to breastfeed successfully. Significantly more mothers know that complementary foods should be introduced after the first six months ((28.8% vs. 51.9%).

Over the 28 months of the CS-VIII project, numerous events have focused on breastfeeding and nutrition with 40,784 individuals participating. The majority of these activities occurred during the first 14 months of the project (see Educational Activities, Appendix I).

C. GROWTH MONITORING

Even though project staff have handed out growth monitoring cards during all community visits, the percentage of children with growth monitoring cards and the percentage of mothers who reported that they had lost the card varied little. However, there has been a change in the practices of mothers and/or Ministry of Health staff with respect to monitoring the growth of young children: at project end, 43.2% of children with growth monitoring cards had been

weighed in the last three months compared to only 24.6% at baseline. Project staff have contributed to this increase through education and by weighing 15,672 children and educating their mothers (see Appendix I).

D. DIARRHEAL DISEASE CONTROL

The percentage of children with diarrhea in the two weeks preceding the survey remains unchanged (41.5 % vs. 42.8 %) and high compared to a rate of 37% reported for the rural areas of the highlands in a 1989 survey. This may be due to a gradual deterioration of living conditions of the population.

With respect to the nutritional management of diarrheal episodes, breastfeeding the same amounts or more remains high and unchanged since the baseline. Improvements were noted in the continuation of the same or more liquids (59.3% vs. 81.1%), while the feeding of solid and semi-solid foods has decreased slightly (35.2% vs. 32.2%). The knowledge of mothers about the nutritional requirements of sick and healthy children remains an important area in need of intensive health education and promotion. When using the USAID indicator for oral rehydration, use of ORT increased from 5 1% at baseline to 67.3 % at project end.

19,074 individuals attended health education and promotion sessions that focused on the management of diarrheal episodes (see Appendix I).

E. ACUTE RESPIRATORY INFECTIONS

The percentage of children with cough or colds was higher at project end than at baseline, while the percentage of children with difficulty breathing is approximately the same. Somewhat more mothers sought help for children with difficult breathing. Knowledge of some of the danger signs of pneumonia improved (rapid breathing: 7.2% vs. 44.5%; chest indrawing: 1.7% vs. 3%; loss of appetite: 8.5% vs. 19.9%; fever: 28.4% vs. 50.8%; and cough: 30.9% vs. 40.7%).

The project has emphasized education about ARI and pneumonia in the last 12 months, and 10,060 individuals participated in educational sessions on ARI (see Appendix I).

F. IMMUNIZATION

Small improvements were obtained in EPI. The low rate for measles immunization was surprising because of a national measles immunization campaign of all children nine months to 15 years. The obtained coverage rate of 62.2% may represent an underestimate, because the MOH handed out a special immunization card for this vaccine and did not record it in the standard immunization/growth monitoring card. The project staff forgot to ask for this card during the interview. The immunization dropout rate was lower in the final KPC survey (12.5 % compared to 16.3% at baseline). Complete immunization coverage rates increased from 50% at baseline to 58.2% at project end.

At baseline only 3.4% of the mothers with children under two had received two or more doses of TT, verified with the maternal health card, compared to 15.6% at project end. Project staff alone administered a total of 5,794 second dosis of TT. The obtained low coverage rate probably represents a large under&mate due to the fact that a significant number of mothers loses the maternal health card, and immunization status cannot be verified.

General nowledge about immunization of children and women has improved from baseline to project end.

G. MATERNALCARE

The women interviewed had two types of health cards, one that contained information about prenatal care and one that contains information of TT vaccination, family planning, and cancer screening. At baseline, only 11% of women had a maternal health card compared to 30.5 % at project end. Participation in prenatal care increased from 64% at baseline to 77.1% at project end, and postpartum care from 22.9% to 30.9 %. The use of modern family planning increased from 5.5 % to 16.8%. Positive changes were also observed in a better knowledge of pregnancy complication or danger signs.